
Operating instructions

CE



Z 1264/1/...

Control unit

Table of contents

1.	Introduction	3
2.	Special features	3
3.	Technical data	3
4.	Electrical connection	4
4.1	Pin diagram for Z 1264 /1/...	4
5.	Start-up	5
5.1	Functions of the keys and displays	5
6.	Function description of the displays with keys	6
7.	Start-up control insert	8
8.	Programming	9
8.1	Programming start	9
8.2	Programming diagram	9
8.3	Menu points	10
9.	Terminals assignment	11
9.1	Load circuit fuses	11
10.	Safety precautions	12

1. Introduction

The HASCO control units Z 1264/1/... are easy to operate with their use of front switches.

2. Special features

Z 1264/...

- Programmable soft start.
- Clear alarm diagnosis.
- Manual or automatic change to selector mode.

- 1 to 24 control circuits using plug-in unit design. (Größere Geräte auf Anfrage)
- Modular design with 3600 watts per control circuit.
- Alarm input and output as standard.

CE The Control unit Z 1264/1/... corresponds to the important protection requirements in agreement with the EU guidelines.

3. Technical data

	Z1264/1/2/...	Z1264/1/3/... Z1264/1/4/...	Z1264/1/5/... Z1264/1/6/...	Z1264/1/7/... Z1264/1/8/...	Z1264/1/ 9/... Z1264/1/10/...	Z1264/1/11/... Z1264/1/16/...	Z1264/1/17/... Z1264/1/24/...
Outside dimensions (B x H x T)	175 x200 x 390	350 x200 x 390	350 x200 x 390	550 x200 x 390	550 x200 x 390	460 x330 x 390	460 x460 x 390
Electronic fuse/cabinet	16 A/ Phase	32 A/ Phase					
Connected voltage	400 V 3 N ~ ± 10 % ; 50/60 Hz						
Power output	Contactless semiconductor end step max. 16 A, in zero voltage switching ¹⁾						
Thermocouple	Fe-CuNi, Typ J						
Operating range	50 ... 500°C						
Control accuracy	± 1°C (at optimum conditions)						
Ambient temperature	10 ... 40°C, warehouse 0 ...50°C						
Alarm output	1 relay make contact max. 50 V ~, 0,5 A						
Power fuse	FF 16 / 500						
Degree of protection	IP 20 (EN 60529)						

¹⁾ = The maximum power consumption of 11KW (16A) / 22KW (32A) must not be exceeded!

4. Electrical connection

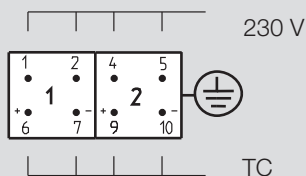
The power and thermal sensor connections between tools and the control unit Z 1264/... are made with the power/signal cable Z 1225/...

The following must be adhered to when using all Z 1264/1/9 to Z 1264/1/24 control inserts:

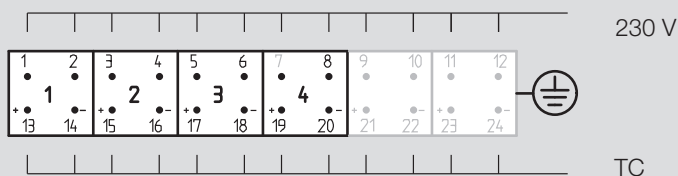
The maximum power input of 21,600 watt must not be exceeded!

4.1 Pin diagram for Z 1264/1/... (Examples)

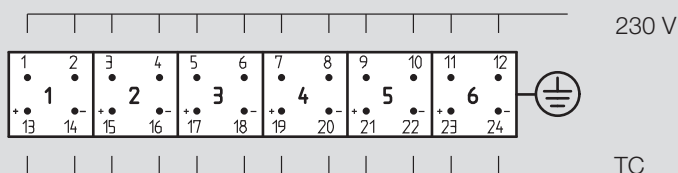
Z 1264/1/2/16



Z 1264/1/4/16

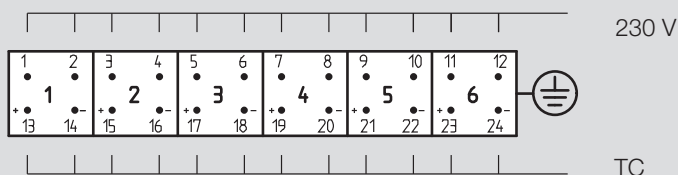


Z 1264/1/6/16

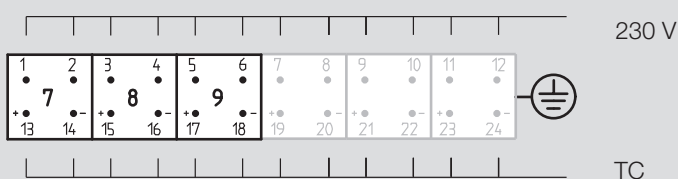


Z 1264/1/9/16

Inserts 1–6



Inserts 7–9



Allocation of pin connection according to DIN 16765

5. Start-up

The hot runner control units are designed for connection to a three-phase electricity grid (see Technical Data). For this purpose, the unit is provided with a CEE plug. The master switch is located on the back and separates the unit completely from the power current.

After careful testing of the cabling, the tool is connected to the control unit.

If required, a connection to the injection moulding machine can be made via the alarm plug.

The individual control inserts are switched On or Off with the I/O key.

Zones that are not needed must be switched off!

Set the set point temperature at the control inserts (see Displays, operation).

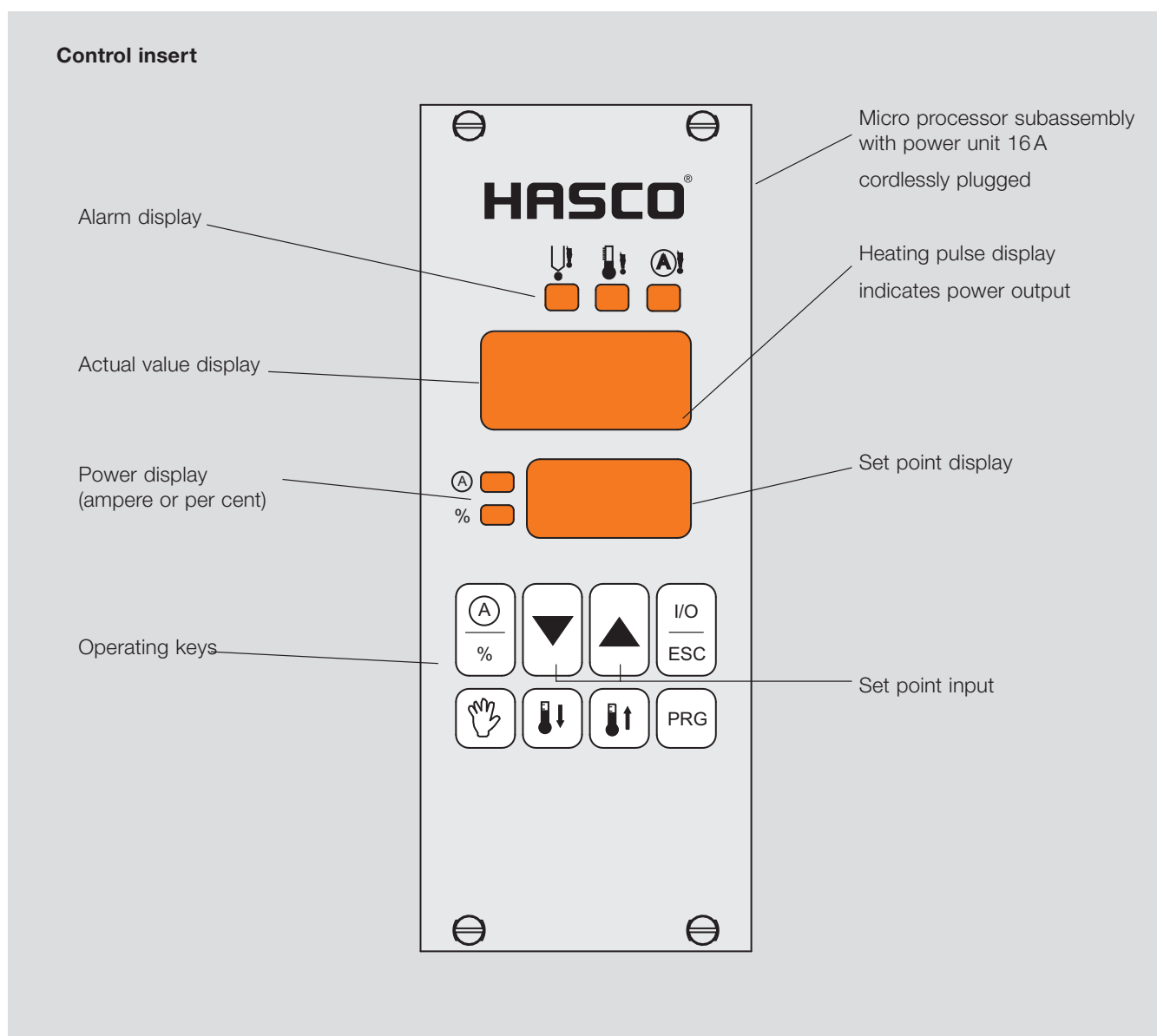
The control inserts now heat the tool evenly, moist heating elements are dried out.

When this occurs, the temperature deviation alarm displays blinks. (Softstartrampe).

After reaching the set temperature, production can start with the factory settings.

If malfunctions occur during start-up, then the cause of the malfunction can be recognized by the corresponding displays at the control insert (see keys and displays).

5.1 Function of the keys and displays



6. Function description of the displays and keys of Z1264/...

Actual value display



Actual temperature in °C. Display heating impulse (decimal point).

Set point display (see Set point input)



Display Output in amperes or % (see transfer key – output display).
 Display Actuator operation "Hnd" and output in % (see transfer key – actuator operation).
 Display Boost "tUP" (see transfer key – boost ↑).
 Display Temperature fall "tdn" (see transfer key – temperature fall ↓).
 Display "Alarm" on automatic takeover of output (see Programming)

Switch-on key



After operation (ca. 2 sec.), the control insert is switched On or Off.
 The module writes its current operating conditions (ON or OFF) into an internal memory.
 Precondition: The controller must be operated at the net min. 2 minutes after switching (ON or OFF).
Insert controllers that are not used must be switched Off!
 * ESC key (see programming).

Set point settings



Set point lower or higher (50 to max. 500 °C; see also set point limiting).
 Setting of the output in % in actuator operation.
 Up, down in programming mode (see Programming).

Transfer key - output display



With this key, you can switch over the output display between amperes or % starting output.
 The respective symbol lights up green in front of the set point display.
 Without a green LED, the set point is again displayed.

Transfer key - actuator operation



This key is used to activate actuator operation. The starting output is manually set in % at the set point entry (see Set point entry). In this type of operation, the actual value display changes continuously between "Hnd" and starting output.

Transfer key - BOOST



With this key, the set point is temporarily increased. The set point display alternates between "tUP" and BOOST temperature (see also Programming).

Transfer key - temperature fall



This key is used to lower the set temperature, the fall value can be programmed from 10 to 200°C (see programming). In this type of operation the actual value display alternates constantly between "tdn" and set point temperature.

This can also be activated with the alarm plug from the machine (see terminals assignment on page 13).

Alarm display - thermal sensor



Is continuously lit if there is a sensor fracture; in the actual value display there is shown "- - -".

If the automatic actuator function is active, the display alternates constantly between starting output and „not“.

For reverse voltage, the display blinks for some minutes after switching on the control insert or the unit Z 1264/1/... .

The actual value display also shows "- - -".

Alarm display - temperature deviation



The soft start ramp blinks during the heating phase. Lights up continuously when rising above or falling below the set limiting temperatures (see programming).

For excess temperature, the current supply is also interrupted (max set point overstepping).

Alarm display - current overload / heating circuit interrupted



Lights up when the set maximum current is exceeded and on interruption of the load circuit.

The power supply is interrupted.

7. Start-up of control insert

Switch main device switch On



Switch On control insert Z 1265/... with key (ca. 2 sec.).

Set point settings



The set point is increased or decreased by the corresponding decimal points by operating the Up and Down keys.

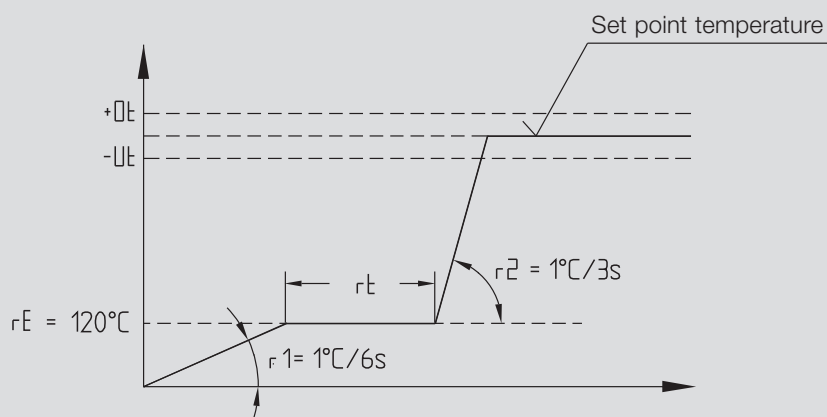
Start switching

After switching on the controller, the temperature increases to the end temperature of ramp 1 ($rE = 120^{\circ}\text{C}$).

After reaching of rE , the dwell time rt is activated (2 minutes).
This permits any residual moisture in the heating elements to escape.

Ramp 2

The 2nd ramp $r2$ starts once the dwell time rt has expired for all control inserts.
The temperature then increases to the set value.



8. Programming

8.1 Programming start

PRG

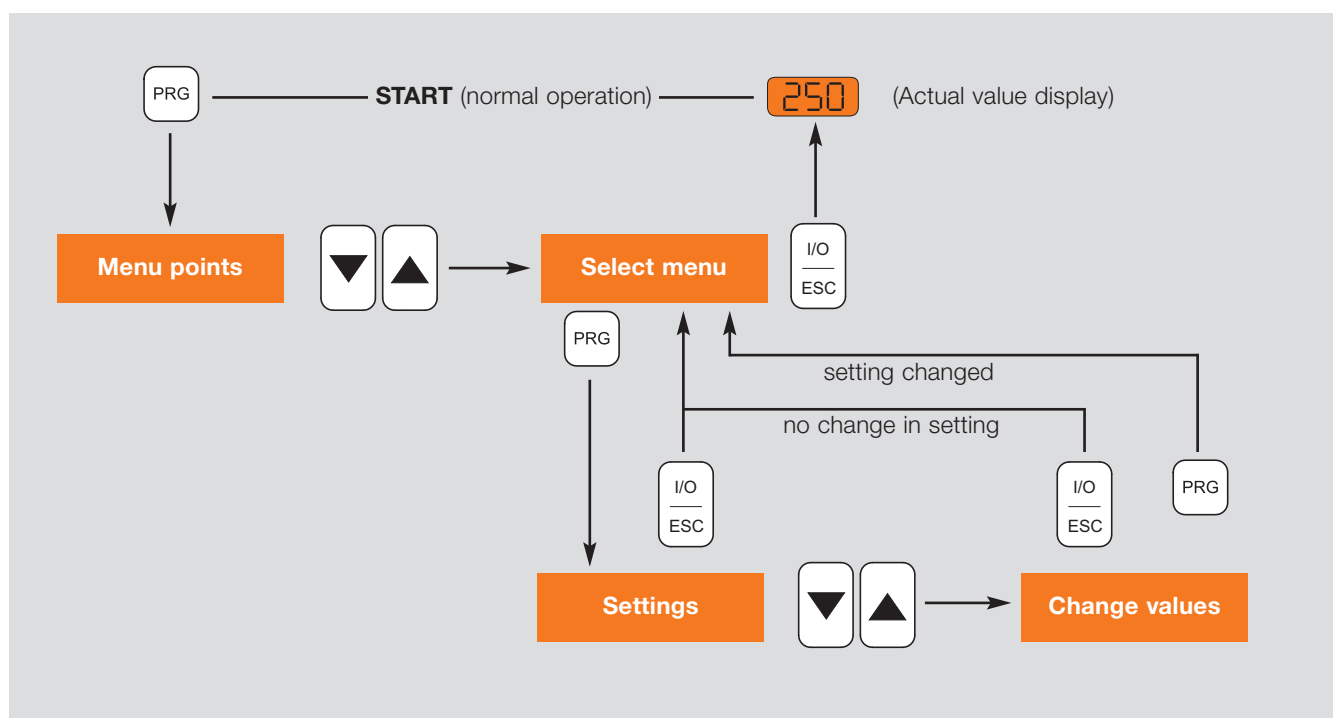
Pressing the PRG key for longer than 2 seconds activates the programming function. If the input lock is active, "Cod" appears as the first item on the menu. The correct entry code must be entered. If the code is wrong, it will not be possible to change any parameters. The set point setting flashes in the set point window. Pressing the key again stops the flashing, and the set point can now be changed using the up and down keys.

By pressing the PRG key, the new value is taken over and flashes again in the set point display. The various menu items are selected with the up and down keys (see Programming).

You can quit the programming mode with the ESC key.

If the settings are changed, the control insert must remain switched on for a few minutes, because only then are the changed values permanently saved!

8.2 Programming diagram

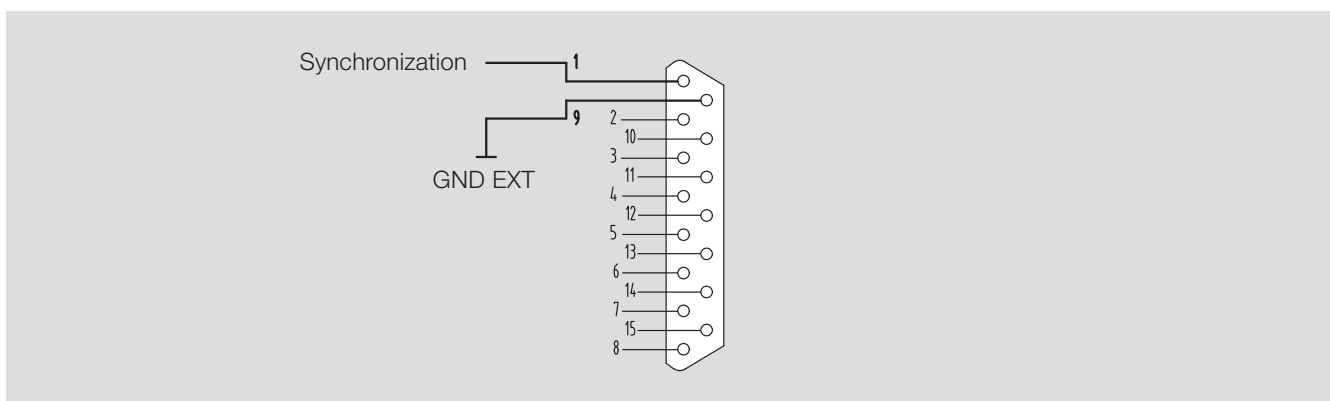


8.3 Menu points

Menu points	Display	Settings		Remarks
		at works	Value range	
Over temperature switch point		10 °C	0 ... 50 °C above set value	
Under temperature switch point		10 °C	0 ... 50 °C below set value	
Over current switch point		16 A	1 ... 16 A	
Temperature fall		50 °C	10 ... 200 °C	
End temperature Ramp 1		120 °C	80 ... 120 °C	
Temperature rise Ramp 1		1 °C / 4 s	1 °C / 10 s ... 1 °C / 2 s	
Temperature rise Ramp 2		1 °C / 2 s	1 °C / 10 s ... 1 °C / 2 s	
Dwell time for end temperature Ramp 1		2 min.	1 ... 10 min.	
Over temperature alarm		I	I = Alarm relay switches O = inactive	Alarm message
Low temperature alarm		I	I = Alarm relay switches O = inactive	Alarm message
Automatic actuator operation		O	I = active O = inactive	(Operating time min. 15 minutes!). For active function, after sensor fracture, heating is continued with the average output performance of the past 15 minutes.
Address input for Central module (Z1266)		99	0 ... 99	
Activation Manual actuator operation		O	I = aktiv O = inaktiv	
Zone adress	 <small>only centr. control</small>	device-dependent	1 ... 99	Number of control circuits to be addressed
Set point limits		450 °C	50 ... 600 °C	
Boost		20 °C	5 ... 60 °C	
Temperature display selector (°C or °F)		°C	°C / °F	When switching from °C to °F, the temperature settings from the factory (°C) must be switched to °F.
Boost time		20 s	0 ... 180 s	Duration of boost process
Thermocouple		J	J / L	Thermocouple selection
Preset		-	-	Reset factory settings
Access code		0 (deactivated)	0 ... 250	Input lock General code 230

9. Terminals assignment

Synchronization connection SUB-D 15 pole.



Several control units can be linked together by means of the synchronization connection. This connection ensures that all units start together with ramp 2.

The pins of the several units must be linked in a parallel manner.

Temperature fall

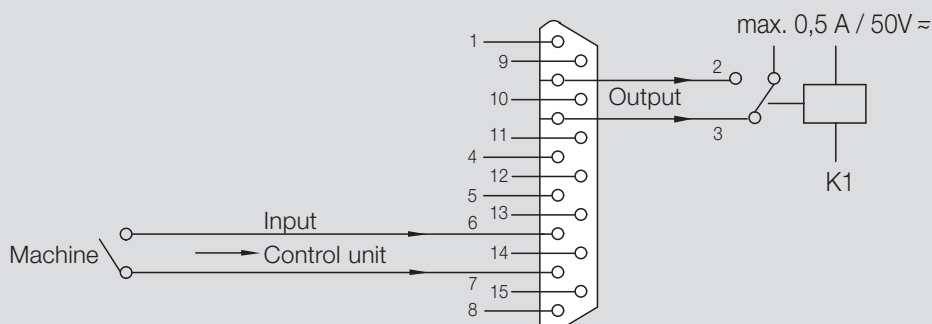
Alarm output
of the injection molding machine

Connection from the injection molding machine to the
control unit

Control unit alarm

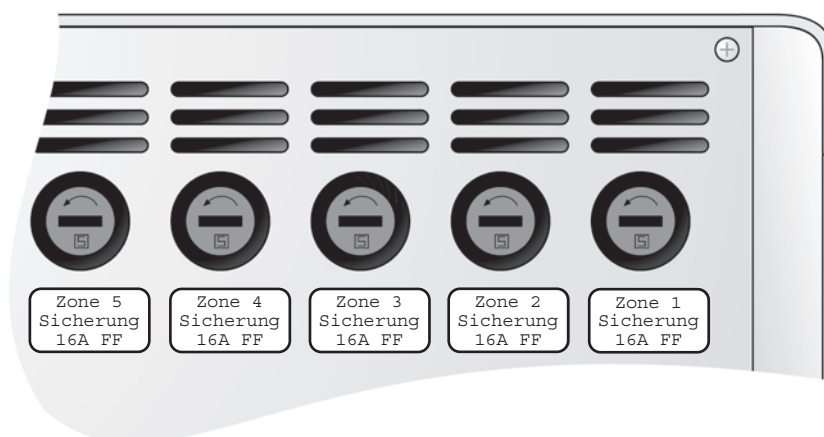
Alarm output
of the control unit (potential-free make-break contact)

Connection from the injection molding machine to the
control unit



9.1 Load circuit fuses

The load circuit fuses are positioned on the back of the unit. Before replacing them, pull out the mains plug. Ensure that the new fuses are of the same type as the existing ones!





10. Safety precautions

- Z 1225/... connecting cables and Z 1227/... connecting housings are to be used for the electrical connections (power and thermocouple connections) between control unit and the tool.
This will ensure optimum controlling accuracy.
- The control units are matched to the HASCO range of standard elements.
No guarantee can be given for trouble-free functioning if components from other companies are used.
- Connection, repair and maintenance work may only be carried out by trained electrical technicians.
- During work on the control units and the linked cables, devices, machines and tools,
all parts must be disconnected from the mains.
The system must also be safeguarded from being unintentionally turned on again.
- The Z 1225/... power/signal cables must be regularly checked for mechanical damage and replaced as necessary.
- The devices must be located such that sufficient ventilation and cooling is available.
- The controllers must be protected from moisture and wet.
- The devices must be applied in a technically meaningful way.
- Unplug the unit when changing the fuse.
- If a module space is not occupied, it must be covered by a cover plate.